



Association of distances to Urban Green Spaces and Open Sports Spaces, with Physical Activity in teenagers of Porto, Portugal

GeoEpidemiology Group

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INTRODUCTION

The increase of physical activity during adolescence is a fundamental strategy in the promotion of health throughout life.

The offer of urban green spaces (UGS) and open sport spaces (OSS) can be a way for increase levels of physical activity, however, it is not entirely clear their effects on adolescents' physical activity.

OBJECTIVE

We aimed to examine the association between distances from residences to UGS/OSS and the intensity of physical activity and the practice of sports in 17-year-old adolescents of Porto municipality.

MATERIALS & METHODS

This study has been developed as part of the EPITeen cohort, assembled by the Department of Clinical Epidemiology, Predictive Medicine and Public Health of the Medical School of Porto University.

We analyzed 1489 (51.4% girls) adolescents living in the municipality of Porto. Practice of sports and intensity of physical activity were assessed using a self-reported questionnaire.

The self-perception of intensity of usual leisure time activities was measured by four subjective categories (mainly sitting, mainly standing, active or very active). For the analyses, participants active or very active were compared with those mainly sitting or mainly standing (reference class).

Participants were georeferenced by home addresses. Geographical Information System (GIS) was used to measure the distances from residences to the limits of UGS/OSS.

Using logistic regression, OR (95% CI) were calculated to estimate the association between distance to UGS/OSS with intensity of physical activity (adjusted to BMI, and Parents' education) and sport activity (adjusted to parents' education in boys and girls and obesity only in boys).

Acknowledgements

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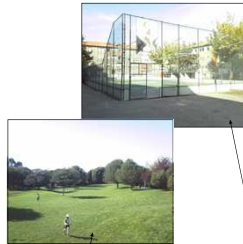
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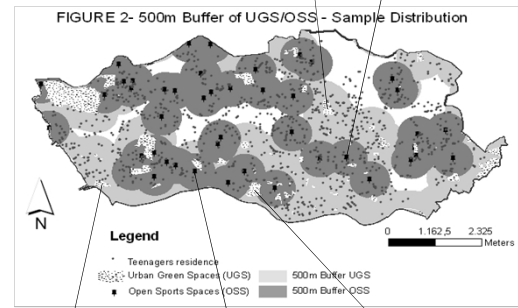
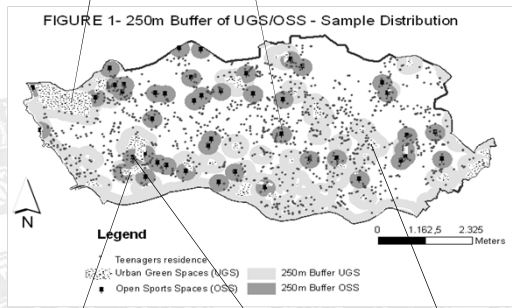


RESULTS & DISCUSSION

Practice of sports was reported by 38% of the girls and by 72% of the boys (p<0.001). Regarding self-perception of intensity of usual leisure time activities, among girls 62% reported been mainly sitting or standing and 38% active or very active. Among boys, those values were 63% and 37%, respectively.



Classes	Girls, n (%)		Boys, n (%)	
	n	%	n	%
U ≤ 250m	332	43.4	298	41.2
G >250m - ≤ 500m	265	34.6	241	33.3
O >500m	168	22.0	185	25.6
S ≤ 250m	199	26.0	159	22.0
S >250m - ≤ 500m	277	36.2	249	34.4
S >500m	289	37.8	316	43.6



Association between distance to UGS and OSS and sport activity

Distance to UGS/OSS	SPORT ACTIVITY, n (%)			
	FEMALE - 458 (62.1% No)		MALE - 196 (28.0% No)	
	Crude OR (CI 95%)	Adjusted OR (CI 95%) *	Crude OR (CI 95%)	Adjusted OR (CI 95%) **
Distance to UGS ≤ 250m	Reference	Reference	Reference	Reference
>250m - ≤500m	0.86 (0.61; 1.20)	0.84 (0.59; 1.21)	0.98 (0.67; 1.45)	0.90 (0.60; 1.35)
>500m	0.69 (0.47; 1.03)	0.70 (0.47; 1.07)	0.92 (0.61; 1.40)	0.85 (0.55; 1.31)
Distance to OSS ≤ 250m	Reference	Reference	Reference	Reference
>250m - ≤500m	1.13 (0.77; 1.68)	0.95 (0.62; 1.45)	1.34 (0.86; 2.10)	1.25 (0.78; 2.01)
>500m	1.78 (1.21; 2.61)	1.34 (0.88; 2.05)	1.33 (0.87; 2.03)	1.12 (0.71; 1.76)
Parents' Education Until 6th Year	Reference	Reference	Reference	Reference
Until 9th Year	2.53 (1.54; 4.16)	2.62 (1.59; 4.31)	1.16 (0.70; 1.90)	1.20 (0.73; 2.00)
Secondary School	3.33 (2.10; 5.26)	3.21 (2.02; 5.12)	2.00 (1.24; 3.22)	2.08 (1.27; 3.39)
College	6.64 (4.24; 10.4)	6.42 (4.08; 10.1)	1.81 (1.16; 2.82)	1.86 (1.17; 2.95)
Obesity <P85	Reference	Reference	Reference	Reference
≥P85	0.83 (0.55; 1.25)	0.70 (0.47; 1.04)	0.66 (0.44; 0.99)	

* Association to UGS/OSS with Sport Activity was adjusted to parents' education

** Association to UGS/OSS with Sport Activity was adjusted to parents' education and obesity

Association between distance to UGS and OSS and intensity of physical activity

Distance to UGS/OSS	INTENSITY OF PHYSICAL ACTIVITY, n (%)			
	FEMALE - 432 (61.5% Low)		MALE - 254 (37.1% Low)	
	Crude OR (CI 95%)	Adjusted OR (CI 95%) *	Crude OR (CI 95%)	Adjusted OR (CI 95%) **
Distance to UGS ≤ 250m	Reference	Reference	Reference	Reference
>250m - ≤500m	0.95 (0.67; 1.34)	0.99 (0.70; 1.42)	0.87 (0.61; 1.26)	0.85 (0.58; 1.24)
>500m	0.75 (0.50; 1.12)	0.81 (0.54; 1.24)	0.70 (0.47; 1.03)	0.69 (0.46; 1.03)
Distance to OSS ≤ 250m	Reference	Reference	Reference	Reference
>250m - ≤500m	0.75 (0.50; 1.11)	0.75 (0.50; 1.13)	1.29 (0.84; 1.96)	1.30 (0.84; 2.01)
>500m	1.20 (0.82; 1.75)	1.11 (0.76; 1.71)	1.37 (0.91; 2.05)	1.38 (0.90; 2.11)
Parents' Education Until 6th Year	Reference	Reference	Reference	Reference
Until 9th Year	1.10 (0.7; 1.74)	1.11 (0.70; 1.78)	1.03 (0.63; 1.68)	0.98 (0.60; 1.61)
Secondary School	1.35 (0.88; 2.07)	1.18 (0.76; 1.84)	1.19 (0.76; 1.86)	1.14 (0.72; 1.80)
College	1.41 (0.94; 2.12)	1.28 (0.84; 1.95)	1.07 (0.71; 1.63)	1.01 (0.65; 1.55)
Obesity <P85	Reference	Reference	Reference	Reference
≥P85	0.58 (0.37; 0.89)	0.58 (0.37; 0.92)	0.63 (0.43; 0.92)	0.62 (0.42; 0.91)

* Association to UGS/OSS with intensity of Physical Activity was adjusted to parents' education and obesity

• Those live farther away of urban green spaces (UGS) practice less sports activities and had lower intensity of physical activity, although these results were not statistically significant. Regarding distances to open sports spaces (OSS) the inverse was observed; the more distant, the more sports active they were and more intense the physical activity was.

CONCLUSIONS

• The proximity to Urban Green Spaces can improve the practice of physical activity in teenagers in Porto municipality, but the offer of public Open Sports Spaces didn't act as promoters of a better sport activity.